

CAPACITY AND RESISTANCE

by

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My father built us kids a sturdy set of wooden shelves for our playroom. The shelves were long and low and deep enough for all of our toys, each toy assigned a place just right for its size and shape. We played by the parentally imposed rule that a toy must be placed back on the shelf before removing another. This kept the playroom tidy, and no doubt helped mom with her daily housework. I don't remember any of us fighting this imposed order; it just seemed natural.

This tendency toward organization must be in our family genes, or hardwired into our cerebellum, and transported by hormones through capillaries to every cell within our bodies. We're not fanatical about it, not obsessed, but through the generations we've kept our things neat and placed just so.

I have no clear recollection of my paternal grandfather's work shed, other than it felt dark and ancient and sat near the alley. Yet from the few old photos I've seen, and from some turbid depth within my subconscious, I know everything inside must have been squared away.

My mother, an artist at heart, found it within her psyche to spend hours each day cleaning the house. With five kids and a husband about, it must have seemed a never-ending task. But she persevered throughout her life, and no matter when one might drop by, the house was immaculate. Dust did not exist within our home; it was miraculously swept away beneath her hand.

My father, one of those handyman types that could build or repair anything, had tools for all functions. When I was small, I had no idea as to the operation of most of them; they were just neat devices my father used to perform surgery on modern electrical marvels like radios and televisions. This was back in the days of glass vacuum tubes and colored wires, before transistors and disposable printed circuits spoiled his fun.

To protect his tools, and to organize them for easy access and storage, my father built a nifty tool cabinet. No ordinary cabinet, this storage unit hung securely on the wall above his basement workbench, with access through two doors that swung wide to reveal the tools arrayed inside. The back may have been pegboard, I'm not sure, but the sides and front were solid, probably half-inch plywood. It's difficult to recall some of those details because the entire cabinet was painted a glossy industrial gray, inside and out. Not only did each tool hang in its own place, but each was outlined in black paint, leaving no question as to where it belonged.

This made it obvious when a tool was in use, or missing from its expected location.

This arrangement always fascinated me. Even as a small child I liked the concept. My father would often say, “If you always put the tool back where it belongs, you’ll always know where it is the next time you need it.” This made complete sense to me, connecting with some innate logic attempting to order my environment and fulfill some cosmic need to counter the immense and sometimes overwhelming chaos of the universe.

I remember times in our house on South 30th Street when my father would be down in that dank, cramped basement working on some project. As a four or five-year-old I would cautiously scooch down the creaky stairs to watch him work and to study that amazing display of tools.

“Can I hold those pliers?”

“When you’re older,” my father would assure me, intent on soldering a wire between two points. “And when you are, you have to promise to always put them back when you’re done. And you’ll have to put them back where they belong.” A puff of steam rose from the suddenly shiny molten metal. “That way you’ll know where they are next time you need them.” He pulled the soldering iron away and gently blew to cool the new connection. “And me too,” he said between puffs. “I’ll always know where they are. That way we can share. Understand?”

“Yes.”

Giving me a stern look, he added, “But if you don’t put them back when you’re done, and I have to go looking for them, I won’t let you use them anymore.” He shook his head from side to side, as if anticipating my failure. “Got that?”

“Yes.”

So that was always the arrangement. Use them and put them back right when a project is finished, right where they belonged, right inside the carefully drawn outlines where they would be expected, and the peaceful order of the household would be maintained.

When I watched my father work, he would show me the parts of the television, explaining the purpose of each component. To me it all sounded like wizardry and looked like a scrambled, colorful mess of wires and doohickeys that somehow created a functional appliance that, once repaired and plugged into a power source, would capture black and white images broadcast invisibly through the air from a tower sitting off along the horizon. We could see and hear Howdie Doodie and Captain Kangaroo and Roy and Dale and Trigger. It was all magic and wonderful and fascinating. And I knew someday I wanted to be like my dad and understand and control all of this sorcery and be able to repair a television when it broke down. I wanted to use those amazing tools to do real work.

Then one day he asked for my help.

“This TV’s shot.” He pointed toward the exposed innards propped up on his work bench. “This one’s beyond hope.” He started plucking off glass tubes.

“You going to throw it away?”

“Nope. I can scrap it and salvage the parts.”

This is my first memory of what would later be called recycling. My father and mother and their parents all lived through the Great Depression. They survived by being frugal and saving everything that might be useful at some future time. There were always boxes of stored “stuff” sitting in the basement or stuck back in a closet or on a shelf somewhere. Just waiting to be used in a time of need. And my father’s work area was no exception. There were boxes and trays of all sorts of electrical parts and tubes and components and wires.

I watched my father remove all of the larger parts, like the cathode ray tube, the power pack, and many other prominent elements. Then he flipped the metal chassis on its side, revealing a wild arrangement of wires with little colored cylinders and brown or black or white lozenges of varying sizes.

“These are the resistors and capacitors,” he explained.

“What do they do?”

“Well, it’s kind of complicated. Let’s just say they’re important in making the TV work.”

“You going to throw them away?”

“Nope. I can use them in other sets that break down.” He lifted a small pair of wire cutters from the tool cabinet. “You want to help?”

“Sure.”

“Okay, here’s what you’ve got to do.” He placed the sharp end of the wire cutters down close to where a wire was soldered. “I’m going to cut out all of these wires; get them out of the way.” He squeezed the handle and clipped, doing the same at the other end, freeing the wire. “When I’m done, I’m going to have you clip out all of the resistors and capacitors.” He looked at me. “Think you can handle that?”

“Sure.”

So after he’d clipped out all of the wires he showed me how to remove a capacitor. Again he held the tip of the wire cutter down near the solder and snipped it off. There were two wires on each capacitor, and each had to be cut. He tossed the freed component into a shallow box, then demonstrated a couple more times.

“Think you can do that?”

“I can try.”

He handed me the cutters and I proved that I could, indeed, follow his directions. I clipped away to his satisfaction.

“Good. You’re doing a good job.” He sat back watching me. “Now . . . there are lots here to do. I want you to go through this whole chassis and clean it out. Get all of these on the top side too.”

“Okay.”

“Don’t rush it. If you get tired, stop. You can finish tomorrow while I’m at work.”

“Okay.”

“And when you get them all cut out I want you to sort them.”

“Okay.”

“See . . . I showed you the difference between the resistors and the capacitors. Put the resistors in this box, and the capacitors in this one.”

“What are the colors for?” Each tiny cylindrical resistor had three colored bands.

“That’s a code to tell their value. How much resistance they give.”

“Okay.”

“If you want . . . if you have time, when you get these all clipped and sorted . . . you can sort the resistors by their bands.” He picked up several and straightened out the short wires protruding from each end. “See . . . this one is blue, yellow, and green. This one is black, yellow, and red.” He placed each on the top of his work bench. “Now see if you can find another that matches one of these.”

So I looked carefully among those I’d already removed and found one that was black, yellow, and red. I placed it next to one on the bench.

“Very good.” He seemed pleased. “Now do that with all the rest. This will save me a lot of work. You’re a good helper.” He patted me on the head, and I blushed with pride.

And so, as my father repaired a small radio, I clipped the used capacitors and resistors, happy to be helping; until our time together was interrupted by my mother calling us to dinner.

The next morning I eagerly headed to the basement, though it was spooky down there by myself. Of course my mother was in and out, washing clothes and hauling them outside to dry.

Happy to be useful, and proud to be old enough now to help my father, I clipped out all of the elements as instructed. When I finished, I started sorting them by color. To help in the process I lined up the resistors along the top of the work bench: black, yellow, red in one row; blue, yellow, green in another; and so on. One row for each color pattern. But I quickly ran into a problem. The darn wires sticking out the sides got in the way. The rows became uneven because the wires wouldn’t lie flat; they just didn’t look organized. That’s when I realized I could help my dad even more, do an even better job than he asked for. He was going to be so proud of me.

I spent all day getting them just right. And when I was done I waited eagerly for my father’s return from work.

“Come on, let me show you what I did.” I grabbed his hand, tugging him toward the basement. I was so pleased. I wanted him to see what I’d done.

We stepped down the stairs, with me bravely in the lead, and flipped on the lights. There, on his work bench, were the rows of tiny cylinders all lined up straight and perfect, all color coordinated and ready for him to use. And that’s when it all ended.

“What did you do?” he shouted.

I looked up at him, puzzled.

“Damn, you ruined them!”

“What? How?”

“You cut the wires off.” His anger made me cringe. “They’re useless now.” With one swipe of his hand across the work bench he swept my day’s work into a trash can.

And, of course, he stopped asking for my help, I inevitably lost interest in his tools, and,

contrary to his dream, I never became an electrician. From that day my father didn't have much capacity for teaching me, and I'm sure, at least in his view, I put up plenty of resistance when he did make an effort.

Yet to this day I've remained ordered and organized. Everything on my desk has a place. Every file in my computer is stashed in a folder within a well-structured file tree. Every one of my tools has a specific place in a tool box or drawer and always gets put back as soon as I'm finished using it. At work I'm often referred to as detail oriented. I can't help it. It's hardwired into my genes.

~ THE END ~

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